

SECTION 2. THE DIVERSITY OF WATERSHED ACTIVITIES IN WASHINGTON STATE

To understand the use of watershed plans or an alternative form of information management and communication, it is necessary to consider the partners potentially involved in a watershed approach, and what the partners' needs are. Section 2 describes a small sample of programs, projects, and initiatives that represent the rich mix of resource management activities occurring in Washington watersheds. The purpose of the interviews described in Section 1.5 was to assess the possibility of establishing a coordinated and cooperative process for developing a common watershed document. The interview participants were encouraged to identify opportunities and barriers to becoming partners in a broadly-defined watershed approach. The programs described briefly in the following subsections do not encompass all of the geographically-based programs focused on water quality or quantity protection. Although not a comprehensive survey, the program descriptions provide the reader with an impression of the diversity of efforts currently operating in the state.

Washington state provides an opportunity to evaluate watershed planning from a variety of perspectives. The state may be unique in the number and diversity of its geographically-based environmental protection programs. Washington serves as an appropriate case study because of the numerous and diverse programs which exist for the protection of watersheds. These programs may have overlapping needs, yet divergent missions and mandates. In 1993, the Office of the Governor conducted an inventory of watershed projects by Water Resource Inventory Area and published the results in a draft report, "Significant Watershed Activity Survey" (Moody 1993). The summary tables of the report identify hundreds of watershed projects sponsored by local, state, and federal agencies, industries, environmental organizations, and private non-profit citizen watershed organizations. The report indicates that there is little or no coordination among watershed projects within the same hydrologic unit. It points to the need for a common information base to improve coordination between projects.

There are also a number of resource management and protection programs in Washington that are not being implemented through a watershed approach. For example, the Natural Resource Conservation Service farm pond (manure lagoon) program provides important benefits to watershed health, but the program is not administered as a watershed program. Although projects may be located within the same hydrological unit, or may be nested within the same regional basin, they do not have common jurisdictional boundaries, limiting their ability to collaborate. The large number of watershed projects and the Ecology Water Quality Program's statewide watershed framework provide both opportunities and incentives for non-watershed programs to become active partners.

Both watershed projects, and resource management and protection programs that do not currently use the watershed approach, are responding to the mandates of environmental legislation such as the Endangered Species Act, the Clean Water Act, and the Safe Drinking Water Act. Many of their project and program goals aim to bring watershed activities and resource management into compliance with

such acts. This report looks at how the activities of diverse watershed and non-watershed groups can be coordinated; it also examines how these groups can better meet the requirements of environmental legislation with one product and/or process. Section 2 focuses on the diversity of activities within the state that could be integrated into a broad-based watershed approach. For each program considered, this section presents:

- a brief program description that includes the sponsoring agency, legislative mandate, nature of activities, and purpose/product of the program; and
- the opportunities and barriers for using the watershed approach.

2.1 Department of Ecology – Water Quality Program

Program Description: In 1992, the Water Quality Program at Ecology established a watershed approach to geographically coordinate the activities of their permitting teams for National Pollution Discharge Elimination System (NPDES), the State Water Pollution Control Act (Chapter 90.48 RCW), and the State Waste Discharge Permitting Program (Chapter 173–216 WAC). The purpose of the watershed approach is to focus the resources of the Water Quality Program on specific activities within a watershed in each year of a five-year cycle, thereby integrating on-going activities within a basin and more efficiently utilizing resources.

Since that time, the activities of the nonpoint source planning team among others have been added to the effort. The approach now encompasses most of Ecology's Clean Water Act planning and implementation activities. The program divides the state into 23 water quality management areas (WQMA) and establishes a schedule for the focus of Water Quality Program activities in each of the WQMA. A map of the WQMA is included in Figure 2–1. Each WQMA is on a five-year cycle that is organized into four major areas of activity:

- **Year 1: SCOPING:** Identify and prioritize known and suspected water quality issues within the WQMA by assembling input from extensive community involvement and internal Ecology staff. Produce a Needs Assessment.
- **Year 2/3: DATA COLLECTION/ANALYSIS:** Conduct water quality Total Maximum Daily Loadings (TMDLs), monitoring, special studies, class II inspections, and general research to discern which of the issues identified in the scoping process are problems.
- **Year 4: TECHNICAL REPORT:** Develop a report in coordination with the community that addresses the above problems and other concerns. Outline strategies and management activities needed to: reissue NPDES and state waste discharge permits, form partnerships, and solidify nonpoint partnerships with grants and/or loans.

Fig. 2–1. Water Quality Management Areas (Department of Ecology 1994).

- Year 5: IMPLEMENTATION: Issue or reissue wastewater discharge permits and work with local programs and partners to implement nonpoint pollution prevention and control activities that respond to priority water quality problems.

The schedule for sequencing WQMAs into the watershed cycle is provided in Table 2–1.

Opportunities and Barriers Within the Watershed Approach:

- Ecology explicitly limited the scope of its statewide watershed approach to its Water Quality Program alone. Several factors contributed to this decision:
 - 1) The Water Quality Program was operating on a mandate that did not extend beyond their own program boundaries. The Water Quality Program was also aware of other watershed initiatives and projects, and was concerned about perceptions that the statewide approach was competing or seeking to supplant these efforts. Instead, the Water Quality Program was looking for a systematic way to complement ongoing efforts.
 - 2) The statewide watershed approach design process was truncated by a court-imposed deadline for implementation of the watershed approach. The deadline restricted the time period for conducting outreach and coordinating with other potential watershed partners.
 - 3) The Water Quality Program does not have the mandate or resources to maintain organizational support in all of the areas that have been targeted for water quality management support. Successful watershed initiatives must have some basis in the community. Ecology is prepared to serve as a catalyst for initiating watershed partnerships, especially during Year 1 (Scoping) of the process. However, local sponsorship and participation must emerge quickly to support and sustain watershed projects through the remaining years of the cycle.
 - 4) Ecology has sustained significant reductions in its budget in the past few years and is anticipating further budget reductions. Consequently, Ecology management is cautious about raising expectations that it can support the statewide watershed framework infrastructure for other partners in the face of declining resources. Promotion of a more inclusive watershed approach with enhanced communication and information management requirements cannot be supported by Ecology's current budget. Additional sources of funding will have to be identified to take the next step in improving the coordination of activities within watersheds.

Table 2–1. Washington State Department of Ecology Watershed Approach to Water Quality Management.

- The 303(d) list of water quality limited waters and the associated Total Maximum Daily Load (TMDL) process have provided both great opportunities and significant barriers to the watershed approach. Court orders often limit the flexibility of the state in developing TMDLs on a schedule that may be inconsistent with the WQMA sequence. In addition, there has been no common understanding between EPA Region 10 and Ecology regarding the acceptability of alternative formats for TMDLs that are consistent with the watershed approach.
- Ecology is developing guidance for Nonpoint Source TMDLs as part of its efforts to incorporate the nonpoint program into the watershed approach. The draft guidance proposes that a nonpoint source TMDL would involve developing mutually agreeable (i.e., voluntary) solutions by local land managers and owners. This will increase the need for communication tools within the watershed that differ from a standard point source TMDL approach.

Despite the concerns and barriers listed above, the consensus–developed WQMA framework supports improved communication and information management. Ecology conducts monitoring and assessment activities statewide and maintains the largest water quality databases in the state. The Ecology watershed approach will provide the type of long–term involvement required to track baseline conditions in the WQMAs. Individual projects may shift around within the watershed mosaic, but Ecology will continue to use the WQMA as the base unit for organizing its activities.

2.2 Ecology’s Shorelands and Water Resources Program: Water Resource Inventory Areas

Program Description: Ecology’s Shorelands and Water Resources Program is responsible for surface and groundwater allocation. The surface water allocation program commenced in 1917 with the legislative enactment of Chapter 90.03 of the Revised Code of Washington (RCW). The groundwater allocation program was enacted in 1945 as Chapter 90.44 RCW. Legislation developed in 1971 (Chapter 90.54 RCW) mandated that the state be divided into 62 watersheds, termed Water Resource Inventory Areas (WRIAs). The 62 WRIAs identified in Chapter 173–500 of the Washington Administrative Code (WAC) are illustrated in Figure 2–2. The Water Quality Management Areas used by the Water Quality Program are composed of WRIAs that have been aggregated into larger basin units.

Recommended instream flows for many of Washington’s rivers have been established by administrative rule; the first were established in 1976. When evaluating new applications for water rights, Ecology must consider the following four criteria:

Is the proposed use of the water considered a beneficial use?

Is water available?

Will any senior water rights be impaired by this use (including instream flows which are

considered senior rights)?
Is the activity non-detrimental to the public interest?

Ecology seeks to balance the need to maintain senior water rights and instream flows that will support salmonid passage and fish spawning habitat with the need to accommodate new applicants. After reviewing each new water rights application, Ecology produces a "Report of Examination" which relates their findings and may or may not grant a water right.

In 1990, the Chelan Agreement was developed as a cooperative response to historic water resource conflicts in Washington. The agreement, which was developed by a diverse assemblage of water resource stakeholders, emphasizes cooperative water resource planning on a regional (WRIA) basis. Planning is intended to be a consensus process, circumventing the need for administrative, legislative, or judicial intervention.

Two watersheds which had been previously recommended by the legislature for regional water resources planning -- the Methow and the Dungeness-Quilcene -- were funded as pilot watersheds to develop plans using the Chelan Agreement process. In each area, an initial meeting of affected representatives was convened to identify stakeholders, identify the issues of concern, define watershed boundaries, establish a time frame for implementing the process, and designate a coordinating entity. The potential for coordination with other related planning activities such as water quality, land use planning, and permitting was also to be considered. Plans in the two pilot watersheds are being developed using the consensus process.

Opportunities and Barriers Within the Watershed Approach:

- Ecology has begun to evaluate new water rights applications within a watershed context by assessing such questions as, what are the other existing uses, the levels of use, and the potential impacts on water quality, does adequate data exist on which to base decisions, if not what specific data gaps exist. Therefore, this program has an increasing need for comprehensive watershed information.
- There are several ties to the Water Quality Program. For example:
 - ◆ the Jefferson County Public Utility District #1 versus the Washington State Department of Ecology (Elkhorn Case) decision establishes that flow is a component of water quality;
 - ◆ water rights data and associated information are stored electronically;
 - ◆ water reuse, reclamation, and conjunctive use information and decisions are closely aligned with nonpoint source program objectives; and
 - ◆ flow augmentation and water reuse have a direct relevance to Water Quality Program decisions.

Fig. 2–2. Water Resource Inventory Areas.

- The watershed approach is useful for examining ground water/surface water interactions, especially in large basins where there is good correlation between aquifers and surface hydrological units.
- Ground water and surface water data acquired from other sources by Water Resources (and any associated analysis) is useful information to the Water Quality Program watershed approach teams (e.g., United States Geological Survey database – 80,000 wells, U.S. Bureau of Reclamation).
- The Chelan Agreement, which established a consensus–based process for planning water resources management within WRIAs, is consistent with the watershed process. Thus there are areas where collaboration would make sense.
- Assessment of development trends within the WRIA provides valuable background information for evaluating water rights application.
- Water rights are viewed as property rights, which can make collaboration controversial and difficult in certain regions of the state.
- The statutory mandates which require Ecology to balance protection of the resource while permitting appropriate development create barriers to cooperation when using a watershed approach.

2.3 Washington Watershed Coordination Council

Program Description: The Washington Watershed Coordination Council (WWCC) was established to coordinate and integrate the watershed activities of ten participating state agencies. It provides a forum whereby state agencies can coordinate their activities in a watershed area including watershed planning. It is intended that the WWCC activities complement and support those of local governments. It is not intended to take over or lead local watershed activities. In this light, it supports locally–driven watershed planning and implementation efforts that protect and restore watershed health (WWCC 1996). Improving coordination and communication among state agencies will serve the stated purpose of enhancing the delivery of services to the watershed. The goal of the program is to improve inter–agency coordination, and external communication through the use of a state agency committee.

Four pilot watersheds have been identified to implement the principals of the WWCC. Lead agencies have been identified for each of these watershed as follows:

- Nooksack – Ecology
- Yakima – Ecology
- Snohomish – Puget Sound Water Quality Action Team
- Chehalis – Ecology.

For each watershed, the lead state agency represents a single point of contact for the watershed. The watershed lead helps direct questions from within the watershed to the appropriate individual within each agency, and ensures that follow-up occurs (WWCC 1996). Supporting state agencies designate a single reference person from among their staff who the watershed lead contacts when issues and questions arise in that watershed. One purpose of the WWCC is to create an environment where the planning or implementation efforts of individual agencies are coordinated and do not conflict within a watershed.

Opportunities and Barriers Within the Watershed Approach:

- The WWCC provides an opportunity to discuss priorities and coordinate activities among the participating agencies. It also serves as a central point for facilitating information exchange.
- The WWCC represents the constituencies of its agencies. Coordination and facilitation efforts must balance the needs of all interests in providing services to local communities within the watershed.
- The WWCC includes only two federal agency counterparts (EPA and the USFS) to the participating state agencies. These federal members are advisory and participatory members of the WWCC. Other federal program activities do not benefit from the coordinative efforts that enhance delivery of services to the local watersheds.

2.4 Ecology Local Action Teams

The Department of Ecology has initiated the formation of local action teams (LATs). These interdisciplinary (cross-programmatic) teams address environmental issues within a specific watershed. As with the WWCC, Ecology designates a single point of contact to help direct questions that arise within the local area. One of the LATs' primary goals is to involve the community in identification of environmental issues and their solutions. In accomplishing this purpose, the LAT leader encourages partnerships to be formed among local governments, tribes, citizen groups, and interested parties.

Four pilot LATs have been formed, three within the last year. The LATs do not necessarily share the same boundaries as WQMAS; some, such as the Chehalis LAT, are nested within WQMAS. The four existing LATs are:

- Nooksack

- Yakima
- Snohomish
- Chehalis.

Although the LATs coincide with the four watersheds designated at the state level to implement the WWCC process, the LAT leader may or may not be the WWCC lead agency contact. The focus of the LATs is to coordinate activities under Ecology's mandates within the basins.

LATs are proactive in planning and consolidating environmental actions within the watershed. The LATs coordinate Ecology's internal resources, as well as focus community resources, that will optimize resource utilization in implementing environmental solutions. For instance, the Yakima LAT serves an important role in building coalitions of stakeholders to implement water quality improvements with respect to the TMDL. The Yakima LAT also serves to educate a variety of local audiences about the TMDL.

While the LAT team leader is a new position within Ecology, the members of the LAT work for the various Ecology programs. As such, they are responsible for conducting the core business of Ecology in that area. Before a LAT is approved, a profile document is prepared. From this profile, Ecology management concurs with the activities for which the LAT will be responsible. It is important to note that both state and local priorities are addressed by the LAT.

Opportunities and Barriers Within the Watershed Approach:

- The Local Action Teams represent several constituencies within Ecology in addition to the Water Quality Program. Their coordination and facilitation efforts must balance the interests of all programs in providing services to local communities within the watershed. For example, a local community may not be interested in using the services of the LAT to address a TMDL, but could be in crisis mode regarding flood management assistance.
- LAT leaders provide a central point of contact for exchanging information and coordinating Ecology activities and priorities within the LAT.
- The function of the LATs is to coordinate existing leadership, not authority or resources. Therefore, they must rely on winning the commitment of others to be effective.
- LAT boundaries may not coincide with those of the WQMA. Therefore, it could be difficult for LATs to respond to shifting priorities within the WQMA.
- A logical outgrowth of LATs could be the establishment of Field Offices to carry out selected business of Ecology in that area. The initiating premise is that Ecology needs to offer services as near as possible to the area obtaining the service. LATs are the first step in accomplishing

that premise.

2.5 Watershed Plans under Chapter 400–12 of the Washington Administrative Code

Program Description: The 1987 Puget Sound Water Quality Management Plan created the Puget Sound local watershed action program (PSWQA 1987). The program is one of the primary means by which local communities manage and prevent nonpoint source pollution. Each of the 12 counties surrounding Puget Sound ranked their watersheds in 1988 according to a set of criteria based on scientific and institutional factors, resulting in a total of 119 ranked watersheds. Watersheds range in size from huge river systems, to clusters of smaller watersheds, to small tributaries. Currently, 30 plans are being implemented in ten of the Puget Sound counties, and 41 committees either have or are developing new watershed plans.

After obtaining funding (generally through the state Centennial Clean Water Fund [CCWF]), local officials appoint a community-based watershed management committee that includes representatives of county government, conservation districts, tribes, businesses, citizens, and special interest groups. For each watershed, the committee leads the planning effort through the following phases: 1) identification and characterization of goals, objectives, and problems; 2) development of solutions for each problem; 3) preparation for implementation, and public involvement; 4) agreement of implementing entities; 5) review of selected watershed priorities by involved agencies, the public, and Ecology; and 6) approval of the watershed plan by Ecology.

This program requires local ("grass roots") participation in developing watershed plans, including a strategy to involve and educate the public in all parts of the watershed. Opportunities for public participation exist through the watershed management committees, during and after the planning process, in the form of watershed tours, or through workshops, streamwalks, cleanups, volunteer monitoring, and other activities.

Opportunities and Barriers Within the Watershed Approach:

The WAC 400–12 watershed management committees provide an effective forum for negotiating consensus priorities within their watersheds. However, the WAC 400–12 process has some issues that must be addressed before it achieves its full potential.

- There is a perception that WAC 400–12 watershed management committee recommendations have not received adequate consideration from Ecology as funded project priorities. The interviews suggest several possible reasons for this perception:
 - ◆ The watershed management committees have identified far more priorities than there is available funding for.

- ◆ The funding mechanisms available are not designed to provide consistent and on-going support to implement the recommendations of the watershed committees.
- ◆ The Legislature requires that 80% of the CCWF money be directed to facilities, and 20% to planning and nonpoint source activities. This creates an imbalance because the watershed management committee recommendations are exclusively nonpoint.
- ◆ An agency that is not part of the 400–12 watershed priority review process may undertake a project that was not on the WAC 400–12 list.
- ◆ There is a perception that WQMA sequence may cause Ecology implementation resources to be focused elsewhere in the state. This may not coincide with the timing of the WAC 400–12 watershed management committee recommendations. Ecology is aware of this perception and is working toward meeting local request for implementation funding regardless of the WQMA schedule.

2.6 Clean Lakes Program

Program Description: The Clean Lakes Program is enabled by Section 314 of the Clean Water Act and is administered by the Water Quality Program of Ecology. This grant-funded program provides for three types of projects, all of which are nested within larger WQMA. Each phase requires local government and citizen lake advisory committee support. This local involvement comes from citizens in the immediate watershed of the lake, and frequently lakefront property owners.

During Phase I, Diagnostic/Feasibility Assessments, funding is provided for in-lake and upland data collection. Physical, chemical, and biological parameters are collected; data are evaluated. With citizen input, a management plan is developed for implementation of Phase II. Phase II grants, Design and Implementation, fund a range of lake improvement activities and structural or mechanical solutions which will directly benefit lake water quality. Phase II Implementation projects may also be funded through the CCWF grants. Phase III, Post-Restoration Monitoring, provides funding for lake water quality monitoring for a minimum of five years following implementation of Phase II activities. The purpose of the Phase III projects is to determine whether long-term improvements have been realized.

Opportunities and Barriers Within the Watershed Approach:

- Clean Lakes Program grant requests often focus on mitigating a symptom within the lake, rather than on addressing the source of the problem within the watershed. Consequently, lake managers focus on solving problems that are located within the confines of the lake, instead of within the boundaries of its watershed.

- Lake associations are frequently not included in the larger watershed planning efforts at the state level. Thus, the monitoring and lake restoration efforts are not recognized by other watershed partners.
- Prior to 1990, the Centennial Clean Water Fund supported five or six local projects each year. However, funding has diminished over the past six years.

2.7 Urban Bay Action Teams

Urban Bay Action Teams (UBATs) were created as an element of the Puget Sound Water Quality Management Plan (Plan) in 1987, and funded by EPA. The Plan recommended that Ecology use these teams to focus state resources for toxic pollutant source reduction, and contaminated sediment site remediation, in highly urbanized areas located at the mouths of major rivers on Puget Sound. Since 1987, UBATs have been established in Bellingham Bay, Elliott Bay, Commencement Bay, Sinclair Inlet, and Budd Bay. The team leaders have established working coalitions with representatives of cities, counties, tribes, industries, and citizen and interest groups to implement projects for source control, site remediation, and in some instances, habitat restoration.

Opportunities and Barriers Within the Watershed Approach:

- The Urban Bay Action Teams have had considerable success in cultivating partnerships within their geographic boundaries, collecting information, and advancing negotiations to implement source controls.
- The UBATs have had some difficulty coordinating with "upriver" partners, which has resulted in some disconnects between mitigation priorities.
- UBATs could use an information clearinghouse as a forum for negotiating more substantive watershed partnerships. The Nooksack was recommended as an ideal candidate for pilot demonstration of an information clearinghouse that would facilitate further progress with existing partnerships. These partners are ready to commit to a common process and product, but the information and communication support needs to be improved.

2.8 Department of Natural Resources Watershed Analysis

Program Description: Watershed analysis is the biological and physical assessment of a watershed to evaluate the cumulative effects of forestry practices on public resources (including fish and water). A process for watershed analysis was developed by forest landowners, tribes, environmental groups, and state natural resource agencies, and became required by law in 1992 (DNR 1995). A watershed analysis is performed on the basis of Watershed Administrative Units (WAUs) which are defined by hydrologic and geomorphologic characteristics. There are approximately 800 WAUs in Washington

state, which range in size from 10,000 to 50,000 acres (DNR 1995). The Department of Natural Resources (DNR) in consultation with cooperators from the Timber, Fish and Wildlife Process, has prioritized WAUs for analysis based on the following factors:

- Slope stability
- Hydrology
- Fisheries
- Likelihood of forest practices occurring in the near future.

DNR or landowners who own more than 10% of the land in a WAU may conduct a watershed analysis. Each analysis is conducted by a team of experts from the relevant scientific disciplines. Each team member is required to meet minimum qualifications, and must be trained in the watershed analysis process. The analysis includes an evaluation of watershed processes (mass wasting, surface erosion, hydrology, and riparian function) and an assessment of public resources (fish habitat, water quality and supply, and public capital improvements such as roads and reservoirs) (WFPB 1995). Once the analysis is complete, the experts develop "prescriptions" (mandatory and recommended forest practices) for the WAU. These prescriptions become requirements for forest practices applications approved by DNR.

Watershed analyses in approximately 70 WAUs have been completed by DNR and private teams since the inception of the program in 1992, at an approximate cost of \$100,000 each. Much of the data gathered has been digitized for use on the Geographic Information System (GIS); however, many of the reports are stored in hard copy only in the regional offices of DNR. DNR anticipates that all forest practices applications (including watershed analyses) will be posted on the Internet within the next six to eight months.

Barriers and Opportunities Within the Watershed Approach:

- Watershed analysis can provide essential information to a watershed team for assessment, priority setting, and developing management strategies. With sufficient coordination, watershed analyses can complement the strategic monitoring component of the statewide process.
- Watershed analysis often depends on land owners or land managers to supply information. If this information is to be used aggressively to list waters for the 303(d) process (water quality impaired), they may be reluctant to share data. This barrier could be addressed by using the information to raise the priority of a location for mitigation, without going to the formal 303(d) listing process.
- The watershed analysis is limited to forested lands in the state, and does not include other agricultural or heavily urbanized areas.

- Current staff and funding levels allow 6 to 8 WAUs (10,00 to 50,000 acre hydrological units) to be completed a year.
- DNR could use information from other watershed partners in the prescription phase to help understand the context of cumulative effects within adjacent or surrounding hydrological units.

2.9 Integrated Landscape Management (ILM) for Fish and Wildlife

Program Description: The Integrated Landscape Management (ILM) approach was initiated by the Washington Department of Wildlife (now called the Washington Department of Fish and Wildlife, WDFW) in late 1992. In June 1993, the Lewis–Kalama River watershed in southwest Washington was selected as a pilot project for testing this new approach. This area was selected because of the diversity in species, multitude of landowners, willingness of the agency staff and the need for plans to address future hydro–electric relicensing efforts, forest practices development, mining, and farming. This new planning process moves away from species–by–species to a broader landscape or ecosystem based approach. ILM is a voluntary, non–regulatory approach to managing fish and wildlife through partnerships between WDFW and landowners. The ILM planning process is currently the only statewide approach that addresses fish and wildlife management at the landscape or ecosystem level on the state’s 43 million acres. The goals are to:

- Work with the public and landowners to prepare, implement and evaluate management plans for fish, wildlife and their habitats at the landscape level with clear ties to WDFW work plans, budgets, goals and objectives; and
- Implement this process as WDFW’s standard method for managing fish and wildlife.

An integrated process is used to:

- Work cooperatively with the landowners, publics, and government agencies to identify goals and objectives for managing fish and wildlife habitats and species;
- Focus the expertise and contributions of individual employees across divisions and programs to achieve common objectives; and
- Bring together all fish and wildlife related data occurring on the same landscape.

Goals and objectives developed by the public, agencies, and the Citizens’ Advisory Group (CAG) are used to identify the desired future conditions for fish and wildlife at the watershed level. GIS and remote sensing technology are used to illustrate the current condition of fish and wildlife habitat and what habitat conditions current land management will create in the future.

When planned land management practices will not meet common goals, voluntary agreements are developed with landowners that will. This is done by working with landowners cooperatively to develop incentives for them to implement positive activities for fish and wildlife. WDFW assists landowners in developing Habitat Conservation Plans (HCP), Forest Incentive Programs, Stewardship Programs, all of which foster a no surprises working environment.

The public is involved and includes landowners, users, interest groups, tribes, and local, state and federal agencies. The public participates in focus groups, public meetings, open houses, a citizens= advisory group, questionnaires, and implementation of the plan.

Watershed boundaries are set by the Washington Department of Ecology for 62 water resource inventory areas (WRIA). The 839,010 acre Lewis–Kalama River pilot area is WRIA #27. This unit is common to other plans for water, flora, and earth resources making it easy to coordinate with other landowners and agencies. Integrated Landscape Management will eventually apply to all 43 million acres in the state.

The final product is a watershed plan which will be used to protect and recover threatened and endangered species and provide wildlife viewing, fishing, and hunting opportunities. The 11 species plans, four habitat plans and one recreation plan are the building blocks of the overall watershed plan. For the Lewis–Kalama River watershed, the final plan will be one document with GIS–based maps illustrating areas, time schedules and options for making changes in the structure and composition of fish and wildlife habitat. It will describe the WDFW's priorities for allocating staff across programs and divisions to achieve fish and wildlife objectives.

Integrated Landscape Management is coordinated with all other natural resources planning activities in the state. Other projects are being conducted in the Lewis–Kalama watershed by the US Forest Service, Clark and Cowlitz County Conservation Districts, and Clark County Public Services. Major landowners include Gifford Pinchot National Forest, Weyerhaeuser, International Paper, Longview Fibre, Plum Creek Timber Company and Department of Natural Resources.

On September 14, 1995, the draft ILM plan, "An Integrated Plan for Managing Fish and Wildlife...Pilot Project in the Lewis–Kalama River Watershed, WRIA #27" was published and distributed. On June 17, 1996, a companion document, known as Volume II to the watershed plan was published which summarizes the process used to develop the pilot project to include what worked, what did not work and recommendations for improving the planning process.

Opportunities and Barriers Within the Watershed Approach:

- Direct and active support by WDFW's Director and Management Team are essential to getting the ILM approach accepted by all employees.

- The CAG is essential to gaining public support for ILM and getting landowners to cooperate in voluntarily changing some land use practices to achieve long range fish and wildlife objectives.
- ILM will be used to address watershed planning demands placed on the agency from the Governor's Office, the tribes, local governments, other agencies and citizen groups.
- ILM will be used to enhance the agency's GIS capabilities and coordination. This includes filling data gaps (such as digitized database for stream and riparian habitat), integrating known data for estuarine areas, and incorporating data as it becomes available through Habitat Conservation Plans and other watershed planning.
- ILM necessitates the development of statewide species and habitat goals and objectives. This subject is currently under discussion by the Timber/Fish/Wildlife policy committee. Such goals and objectives become the foundation for integrated landscape management planning in HCPs or watershed planning.
- WDFW will develop an ILM operations manual outlining specific guidelines and tactics to consider when a project manager leads an ILM process. Such leadership could result in a watershed identified as a priority by the Governor's Watershed Coordinating Council.

WDFW staff from Olympia and Vancouver are currently developing actions that will achieve multiple benefits for habitats and species objectives not met in the **A**hot spot@ areas by the year 2014. The action plan will be used WDFW to start negotiations with willing landowners to discuss voluntary agreements for meeting the objectives.

Discussions are currently taking place with other state agencies to identify opportunities for joining efforts to maximize efficiencies, resource benefits, and cost savings in watershed planning.

2.10 Natural Resources Conservation Service Programs

Program Description: In recent years the Natural Resource Conservation Service (NRCS) (formerly the Soil Conservation Service) has developed national initiatives that focus on natural resource protection from an ecosystem perspective (SCS, 1992a). National Initiative Three, to "provide ecosystem-based assistance to our customers for the integrated management needed to sustain natural resources," includes the following supporting goals:

- Strengthen organizational attitudes, structures, and processes to support ecosystem-based assistance.
- Provide leadership for developing policies, regulations, and legislation that promote an

ecosystem approach.

- Identify indicators that can be used to measure the results of conservation systems and programs in terms of ecosystem health.
- Develop and implement comprehensive education and marketing strategies for ecosystem-based assistance.

In Washington, NRCS provides assistance at two levels. First, NRCS technical staff work with individual landowners to ensure that their landuse practices do not adversely affect the environment, including water quality. This may take a number of forms, for example: education, assistance in designing manure lagoons to prevent surface water contamination, and fencing to prevent cattle from having direct access to streams. NRCS staff may work with Ecology staff to identify landowners who have the most severe water quality impacts. NRCS staff may also work with local watershed groups to assist them in developing management practices for reducing nonpoint pollution to be recommended in watershed plans.

Second, under the Watershed Protection and Flood Prevention Act (Public Law 566), state conservationists from the NRCS provide technical and financial aid to local organizations for planning and carrying out watershed projects (SCS, 1992b). These projects can include:

- Flood prevention
- Water quality improvement
- Agricultural water management
- Water-based recreation
- Municipal and industrial water supplies
- Fish and wildlife development.

Local organizations may make application for financial aid to develop a watershed plan—environmental impact statement for their project. Such plans are required to address:

- Problems
- How, when, and by whom the proposed measures will be installed
- Environmental effects
- Methods of financing.

After a thorough review by NRCS staff, the local organization and NRCS sign a watershed agreement. The project may then be funded through a cost-sharing agreement.

The watershed projects are locally focused in areas smaller than WQMA and WRIA. The projects are built upon long-term trust between NRCS staff, local landowners and organizations.

Opportunities and Barriers Within the Watershed Approach:

- NRCS currently uses Ecology assessment data on an incidental basis for locating and designing conservation projects [i.e., farm ponds (manure lagoons)]. A stronger watershed partnership would help NRCS focus their outreach efforts to landowners on priority water quality mitigation areas.
- In a broad-based watershed partnership, NRCS would provide substantial technical assistance, expertise in working with landowners, and cost share funding that would significantly enhance the resource protection options of water quality programs.
- NRCS cautioned that targeting must fall short of "red dotting" individual landowners as specific sources of significant nonpoint source pollution.

2.11 King County Surface Water Management Division

Program Description: The King County Surface Water Management Division provides technical and staff support to four watershed forums in the county. The programs are based on a 17-year history of cooperation among elected officials from four cities in King County who have jointly developed inter-jurisdictional solutions to flooding and drainage problems.

In 1995, the King County Council created and funded the Green/Duwamish Watershed Forum, a new alliance of elected officials from 12 local governments in the Green and Duwamish watersheds. The Forum's task is to address and resolve water resource problems that cross local boundaries, such as water pollution, flooding, and loss of stream habitat. The Forum allows local officials to establish common priorities and pool resources.

Three other Watershed Forums have been established in King County, most of which are nested in the Cedar/Green WQMA of the Ecology Water Quality Program. Each forum is staffed by the King County Surface Water Management Division, and has the following responsibilities:

- Convene elected officials and other decision-makers to identify concerns, establish priorities, and initiate solutions to watershed issues and problems.
- Support compatible actions undertaken by cities and other entities within the watershed.
- Conduct specific technical analyses to resolve watershed policy issues.
- Provide stewardship and public education activities.
- Improve access to information, expertise, and other resources for watershed citizens,

organizations, and public officials.

- Guide the Surface Water Management Division and other county capital projects, programs, and other implementation actions within the watershed.

The METRO Water Pollution Control programs have also been consolidated with the King County Surface Water Management Division. This merger adds many NPDES functions for the Seattle metropolitan region wastewater treatment, and control of pollution from wet weather flows. As a result, a number of programs that address many of the significant stressors existing within one watershed have been brought together within one organization.

Opportunities and Barriers Within the Watershed Approach:

- The consolidation of water quality programs, and the use of hydrological units, will allow King County to use assessment data to prioritize their available water quality dollars in order to implement the optimal management strategy for watershed health. The county will have improved capability to rank water quality risks in an effort to target the most cost-effective project objectives. A comprehensive analysis of point source controls, wet weather BMPs, CSO infrastructure, landuse options, and physical habitat restoration can be considered within the watershed context.
- King County Surface Water Management will be able to more effectively represent water quality interests to elected officials and community leaders through established watershed forums.
- The involvement of elected officials early in the planning process provides agencies with a clearer assessment of potential implementation problems prior to committing a high level of resources to a particular solution. The difficulty of involving local elected officials is that they can be strongly risk averse to mitigation programs that require a commitment of local resources, or that adversely impact development plans.
- The consideration of zoning and landuse is a welcome component in evaluating the long-term effectiveness of a mitigation strategy relative to the potential impact of anticipated development.
- Using hydrological units that cross jurisdictional boundaries facilitates assessment and negotiations between upstream and downstream participants.

2.12 Citizen Watershed Initiatives: Save Lake Sammamish

Program Description: Citizen sponsored initiatives by definition and necessity have a diverse set of goals, structures, modes of operation, and products. It is not possible to choose one example that

characterizes this set of watershed partners; however, it is important to represent them. Save Lake Sammamish is a citizen-initiated organization. Its charter mission is to serve as representative for the lake and to protect the lake from further degradation. The citizens who founded Save Lake Sammamish were struck by the lack of coordination among agencies within the watershed, and the frequency with which they worked at cross purposes. The goal of the organization is to better coordinate and integrate the activities of various agencies working within the Lake Sammamish watershed. Board members are encouraged to serve on other resource management boards to provide further the cross-fertilization necessary for collaborative projects. Rather than focusing solely on mitigation objectives, the organization envisions an increased emphasis on pollution prevention and preservation of watershed resources.

It is important to briefly note two other citizen initiatives that have taken a form different from that of a resident watershed committee.

Citizens helped to sponsor an Open Space bond in King County that had a provision for establishing a Citizens Oversight Committee. This committee has legislative oversight for the expenditures made under the \$117 million bond. The oversight committee established a partnership with King County to form "Waterways 2000", which identifies open space objectives that will provide protection to King County waterways. These waterways will be preserved through purchase or easement. Waterways 2000 includes representatives from the Surface Water Management program and Parks and Recreation who work with citizen representatives. The passage of the bond gave citizens real authority in developing and directing agency partnerships.

The Mountains to Sound Greenway Trust (Trust) is a citizen-initiated public/private partnership which aims to establish a corridor that provides a green space connection from the Cascade Mountains to Puget Sound. To accomplish this objective the Trust has established a series of agreements between local agencies, the Washington State Department of Natural Resources, the U.S. Forest Service, and private corporations. The Trust maintains an inclusive board that has representatives from both the public and private sectors. The corridor currently includes 120 miles of greenway.

Opportunities and Barriers Within the Watershed Approach:

- Organizations that include private citizens and local agencies can build zoning and landuse into their mission more effectively. Landuse is the key to long-term protection of water resources in a watershed approach.
- Involvement of citizens can be an effective catalyst for agencies in overcoming "turf" issues, because there is an incentive not to block implementation.
- Citizen committees without funding authority do not have significant leverage in creating partnerships with state and federal agencies.

- Public agencies may be reluctant to accept and use monitoring data collected by volunteers. An information clearinghouse would provide the opportunity for agencies to compare volunteers' data with agency monitoring data from the same location, and evaluate their quality and consistency.
- A central collection point for watershed information -- including assessment data and information on existing and proposed agency activities -- would enhance the ability of citizen watershed initiatives to make informed recommendations. Agencies could use this information to improve their awareness of community-based priority setting and mitigation initiatives. For example, first-year Ecology scoping activities could be facilitated by quickly identifying possible local sponsors.

2.13 Source Water Protection for Drinking Water Supplies

Throughout Washington state there are many well established programs for protecting drinking water supplies for municipalities. The Safe Drinking Water Act Amendments of 1996 (P.L. 104-182) are the latest in a series of legislative mandates that states and local municipalities have responded to for development of policies and practices to protect public drinking water supplies. In addition, the Clean Water Act ensures protection of surface waters designated, in part, for use as drinking water. State environmental laws have also supported programs for protection of both surface and ground waters. These programs include the Wellhead Protection Program, Sole Source Aquifer Program, Underground Injection Control Program, among others. RCRA, CERCLA, and FIFRA have in conjunction with the CWA and SWDA provided authorities, financial support, and technical assistance to protect sources of drinking water, especially ground waters. Many municipalities established protection programs long before any state or federal legislation was on the books. Recently the protection of both ground and surface water supplies has come under the common heading of source water protection.

Washington state has a Source Water Protection Program within the Department of Health to provide local programs with guidance and assistance. Many municipalities maintain programs to manage watersheds and well-head areas that are located outside their municipal boundaries. Examples include:

- Seattle – Cedar River and south Fork Tolt River watersheds
- Spokane – Spokane/Rathdrum Prairie Aquifer (ground water)
- Everett – Spada Reservoir in the Sultan Basin, and
- Olympia – Allison Springs Area Wells (ground water).

The municipality acts as a catalyst for watershed protection in these areas that often include multiple landowners and managers. Building understanding and support for the policies and practices that are necessary to protect the drinking water supply poses significant information management and communication support challenges.

The Association of Metropolitan Water Agencies and U.S. EPA recently sponsored a stakeholder meeting for local water providers and state agency staff to consider guidance on Source Water Protection that is required by the 1996 SWDA Amendments. Many of the participating municipalities presented information on existing source water protection programs and commented favorably on the effectiveness of a watershed approach. However, participating municipalities also identified the need for an established framework to improve information management and communication support. In most cases the cities have the burden of providing these services for other affected watershed partners including many state and federal agencies.

2.14 Other Programs

Numerous other programs in Washington support activities that may influence water quality either within or across watersheds. Most of these do not correspond to the WQMA established by Ecology's Water Quality Program. However, they may be nested within the WQMA. Although the scope of this project did not permit interviews with representatives from all of these groups, the programs are mentioned here to assist in future efforts to integrate and coordinate water quality management activities:

- Coordinated Tribal Water Quality Program
- Wild Stock Initiative
- Conservation Districts
- Agricultural Extension Service Programs
- Shellfish Protection Districts
- Integrated Landscape Management through the Department of Fish and Wildlife
- Local Volunteer Monitoring and/or Restoration Programs
- Wetland Integration Strategy
- Local Landuse Planning under the Growth Management Act
- Wellhead Protection Program
- Drinking Water Watershed Protection Program
- Comprehensive State Ground Water Protection Program Plan
- Ground Water Management Area Program
- River Council of Washington
- Tribal Watershed Initiatives

2.15 Considerations Based on Watershed Planning in Washington

The diversity of programs described in the preceding subsections is depicted schematically in Figure 2–3. These activities form a mosaic of watershed protection efforts across a hypothetical WQMA. The mosaic of watershed protection efforts being conducted simultaneously in any one basin may include preparation of plans such as habitat conservation plan, NRCS farm plans, DNR watershed analysis, and water quality activities. Currently, the efforts of the myriad of agency programs and

local groups are not necessarily coordinated. The WQMA framework was not developed to coordinate the mosaic of watershed planning efforts across agencies and local groups. Water Quality Program resource limitations would not support such coordination.

However, a coordinated process or format for sharing data, studies, plans, projects, and agreements within a watershed could reduce redundancy and increase efficiency of scarce public resources. The WQMA framework, as well as other resource management programs and activities could benefit from information sharing.

Many of the planning efforts are being performed at the local level by advisory committees which represent a wide variety of divergent interests. Local participants may include: landowners, business and industry, agriculture, tribes, local (city and county) governments, state and federal agencies, port authorities, environmental interest groups, and private citizens. While some of these local planning and implementation groups have developed, funded, and implemented plans that improve water quality, many more are in the early stages of working cooperatively and building trust. During these initial stages, the relationships are tenuous and would not withstand the commitment needed to develop a common product such as the Watershed Management Plan developed in other states. However, in interviews for this project, representatives from these groups expressed a willingness and enthusiasm to share information applicable across a WQMA as a mechanism to begin cooperation and trust-building. Section 3 describes a model that aims to fulfill this goal.

Fig. 2-3. Mosaic of Watershed Activities.